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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,683	03/06/2002	Man Hon Cheng	SC11850HP	3796

23125 7590 04/07/2004

MOTOROLA INC
AUSTIN INTELLECTUAL PROPERTY
LAW SECTION
7700 WEST PARMER LANE MD: TX32/PL02
AUSTIN, TX 78729

EXAMINER

MITCHELL, JAMES M

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/092,683

Applicant(s)

CHENG ET AL.

Examiner

James M. Mitchell

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-15 and 17 is/are rejected.
- 7) ☐ Claim(s) 3 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4, 5, 8, 12-15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Otsuki (U.S. 5,633,529).

3. Otsuki (Fig 1, 6, 8) discloses a semiconductor device (20), comprising:
a generally square paddle ring (36) having an inner perimeter, an outer perimeter, and an opening (not labeled) that is unfilled and therefore a cavity located within the inner perimeter; first row of terminals (38a) comprising a plurality of spaced projections from the outer perimeter of the ring that is integral with extending outwardly from and generally surrounding the paddle ring, wherein each of the terminals of the first row of terminals is sized and shaped such that a wire may be wirebonded between the terminal and a bonding pad (22) of an integrated circuit die disposed within the cavity and the terminal may be cut and thus separated from the paddle ring; a second row of terminals (32) aligned with, surrounding, and spaced from the first row of terminals, a connection bar (portion of 70; Fig 6) surrounding the first and second rows of the second row of terminals, wherein each of the terminals of the second row of terminals is connected to the connection bar and wherein the first row of terminals is connected (via item 38) to the second row of terminals at a corner of the connection bar and the

connection bar is inherently connected (via item 38) to at least one of the terminals of the first row of terminals or the paddle ring at a corner thereof.; an integrated circuit die (20) placed within the cavity and surrounded by the paddle ring, the die including a plurality of die pads; and a plurality of wires (46, 42) electrically connected to respective ones of the terminals of the first and second rows of terminals and the die pads; and a flag member (10) located within the cavity that supports the integrated circuit die; and an adhesive material layer (Col. 6, Lines 56-59) disposed on a top surface of the flag member for securing the die to the flag member; wherein the flag member is integral with the paddle ring via encapsulant (60) covering a top surface of the integrated circuit die, the first and second rows of terminals, and the paddle ring, wherein at least a bottom surface of the first and second rows of terminals is exposed.; and the terminal may be cut and thus separated from the paddle ring without destroying the wirebond.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki (U.S 5,633,529).

6. Otsuki discloses the elements stated in paragraph 3 of this office action, but does not appear to explicitly show that the leadframe is formed of copper or that the leadframe is formed by etching.

7. Examiner takes official notice that copper was a well-known conductive material at the time the invention was made, and that it would have been obvious to one of ordinary skill in the art to form the frame of Otsuki out of copper in order to provide conductive leads.

8. With respect to product by process claim "the leadframe is formed by etching," the prior art structure is the same as the claimed invention. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki (U.S. 5,633,529) as applied to claim 8 and further in combination with Ikenaga et al. (U.S. 2001/0045628).

10. Otsuki does not appear to explicitly show the leadframe further comprising another row of terminals connected to a first side of the connection bar opposing a

second side of the connection bar to which the second row of terminals is connected said another row of terminals for connecting to a second integrated circuit die.

11. Ikenaga (Fig. 7) utilizes a leadframe further comprising another row of terminals connected to a first side of the connection bar opposing a second side of the connection bar to which the second row of terminals is connected said another row of terminals for connecting to a second integrated circuit die.

12. It would have been obvious for the leadframe of Otsuki to further comprise another row of terminals connected to a first side of the connection bar opposing a second side of the connection bar to which the second row of terminals is connected said another row of terminals for connecting to a second integrated circuit die, in order to provide mass production of semiconductor packages (Par. 0025).

Allowable Subject Matter

13. Claims 3 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

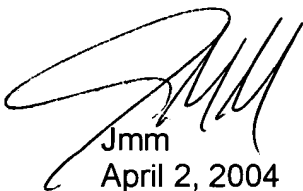
14. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or make obvious the inner perimeter of a paddle ring includes a plurality of spaced projections wherein a cavity is located within the inner perimeter and a first row leads integral with the paddle ring such that they can be cut and separated from the ring including all the limitations of the independent claims.

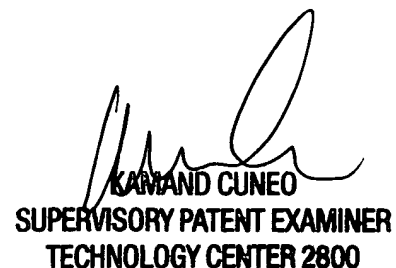
Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jmm
April 2, 2004


KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800